

# LAWRENCE

## STEEL AND ALUMINUM

# ROLLING DOORS



### SERVICE DOORS

OPERATED: push-up, chain, crank, or electrically

### SHUTTERS

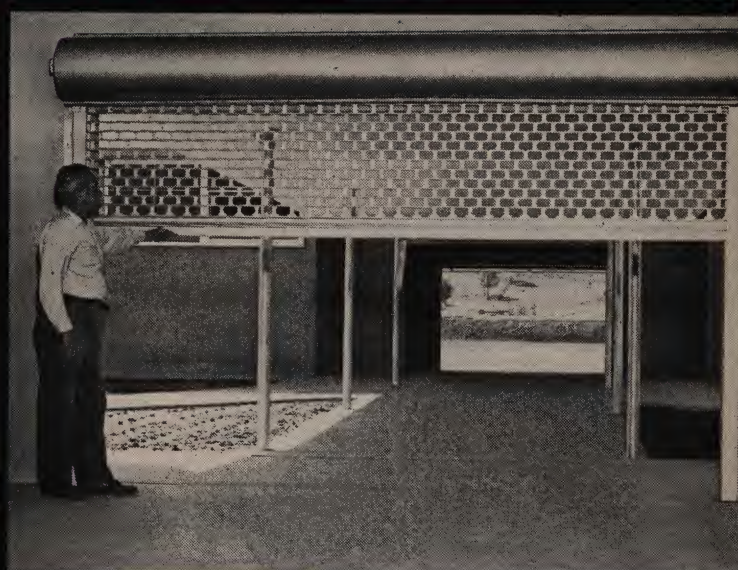
OPERATED: push-up, chain or crank

### FIRE DOORS

(UL labeled) auto and non-auto manual, chain and crank operated

### GRILLES

all operations, many designs



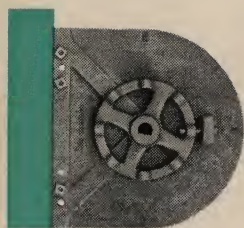
"Founded In 1925"

THE **LAWRENCE**

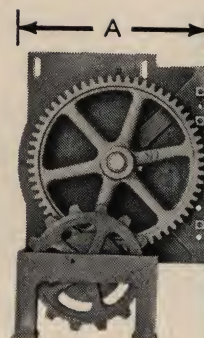
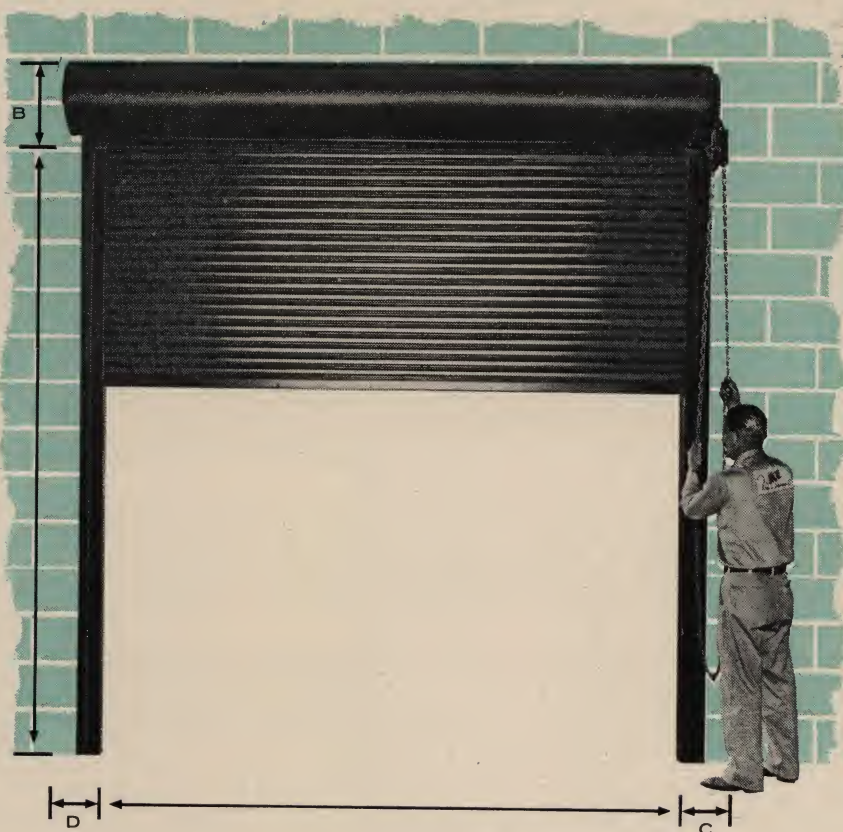
STEEL COMPANY

5746-58 VENICE BLVD., LOS ANGELES 19, CALIF.  
CABLE ADDRESS: LAWRENCE, LOS ANGELES

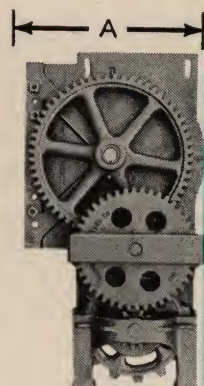




Typical External  
Adjustment Method



Single Reduction Chain



Multiple Reduction Chain

### Service Door Specifications

#1. CURTAIN: The door curtain shall consist of rolled, (not drawn) continuous interlocking slats of hot dipped galvanized and mill bonderized (for paint adherence) open hearth copper bearing steel. Sharp curves, crimps, galvanize blisters shall not be acceptable. Slats available for use shall be the "B" section with  $\frac{1}{2}$  inch crown and available in 22 and 20 gauges and the large "A" slat, a  $\frac{7}{8}$  inch crown available in 22, 20, and 18 gauges. Standard galvanizing coating is 1.25 ounces per square foot.

#2. ENDLOCKS: Alternate slats shall be secured at each end with heavy duty malleable endlocks of not less than  $\frac{3}{8}$  inches in thickness held in place with not less than two steel rivets.

#3. BOTTOM RAIL: The bottom rail shall be composed of not less than two angles with minimum legs of  $1\frac{1}{2}$  inches bolted back to back with not less than  $\frac{1}{4}$  inch screws, bolts or rivets.

#4. BARREL: The barrel (roller) shall be of prime steel pipe and shall carry the door load with a deflection of not more than .03 inches per foot of width. The barrel shall revolve on pre-lubricated ball bearings.

#5. COUNTERBALANCE: The counterbalancing of the door weight shall be by means of an helical coil spring of oil tempered wire and shall have an external adjustment for proper counterbalancing of the door weight to give an operating pull of 25# maximum.

#6. BRACKETS: End brackets shall be of high tensile grey iron free from flaws and at least  $\frac{3}{8}$  inches in thickness secured to the guide structure with  $\frac{1}{2}$  inch bolts.

#7. GEARING: All gearing used on these doors shall be of high tensile grey iron made from machine cut patterns and mounted to give easy adjustability to take up future wear or meshing of replacements and modifier elements.

#8. HOOD: A neatly formed hood of not less than 24 gauge (.025) metal of equal specifications as curtain slats shall house the door roll being attached at not less than 3 points on each end bracket. The hood shall be further supported at points 8 feet on center on  $\frac{5}{16}$  x 2 mild steel or grey iron interim supports when units are in excess of 15 feet in width.

#9. GUIDES: Door guides shall be fabricated of not less than  $\frac{3}{16}$  inch thick material carefully formed into channel and mounted on heavy structural angles. Guides shall be secured to the wall by either well set fittings or deep cast bolts. Depth of guide channel shall be sufficient for 20# wind pressure or as ordered by customer.

#10. PAINTING: Each door shall receive one coat of rust inhibitive primer especially ground to afford best paint adherence characteristics. (Special type of primers available upon request).

#11. Operation shall be by means of continuous galvanized hand chain on all units over 8'-0" x 8'-0" and available on smaller units.



## Service Door Clearance Tables

Opening Height → Width ↓	To 6'-0"			To 7'-0"			To 8'-0"			To 9'-0"		
Dimensions in Inches	A	B	C D	A	B	C D	A	B	C D	A	B	C D
To 6'-0"	13	14	5	13	15	5	14	17	5	14	17	5
To 7'-0"	13	15	5	13	16	5	14	17	5	14	17	5
To 8'-0"	13	15	5	14	16	5	14	17	5	14	17	5
To 9'-0"	14	17	5	14	17	5	14	17	5	Not Recommended		

MANUAL  
(No Gears)

Opening Height → Width ↓	To 8'-0"				To 10'-0"				To 13'-0"				To 16'-0"				To 24'-0"			
Dimensions in Inches	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
To 8'-0"	14	17	7½	5	14	17	7½	5	17	19½	8	6	17	21	8	6	.....			
To 12'-0"	14	17	7½	5	17	19½	7½	5	17	19½	8	6	17	21	8	6	17	21	8	6
To 16'-0"	14	17	8	6	17	19½	8	6	17	21	8	6	17	21	8	6	22	25	9	7
To 20'-0"	17	21	8	6	17	21	8	6	17	21	8	6	17	21	8	6	22	25	9	7
To 28'-0"	17	21	9	7	17	22	9	7	22	25	9	7	22	25	9	7	.....			

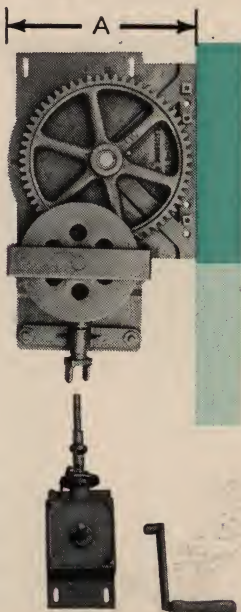
Single and  
Multiple Reduction  
Chain

Opening Height → Width ↓	To 8'-0"				To 10'-0"				To 13'-0"				To 16'-0"				To 24'-0"			
Dimensions in Inches	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
To 8'-0"	14	17	10½	5	14	17	10½	5	17	19½	11	6	17	21	11	6	.....			
To 12'-0"	14	17	10½	5	17	19½	10½	5	17	19½	11	6	17	21	11	6	17	21	11	6
To 16'-0"	14	17	11	6	17	19½	11	6	17	21	11	6	17	21	11	6	22	25	12	7
To 20'-0"	17	21	11	6	17	21	11	6	17	21	11	6	17	21	11	6	22	25	12	7
To 28'-0"	17	21	12	7	17	22	12	7	22	25	12	7	22	25	12	7	.....			

Single and Multiple  
Crank or Thru the Wall  
Operation (#1180)  
See Below

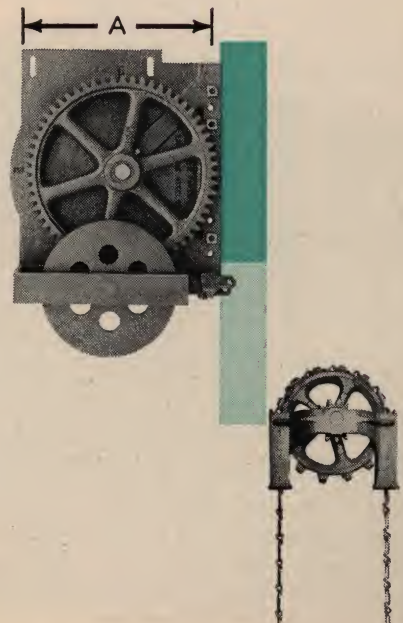
Blanks (—) please refer to factory.

\*Reverse C&D if chain operation desired at left jamb



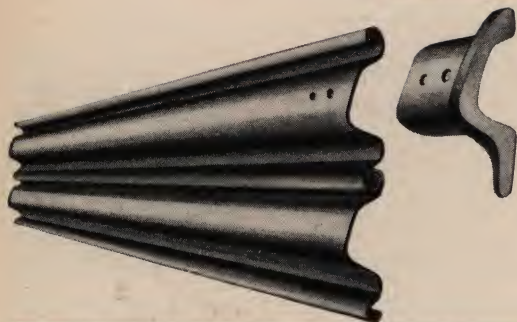
Crank

Thru the Wall





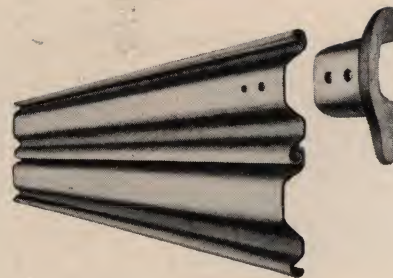
A for "Able"



### Service "Duty" Slats

Lawrence "Able" slats (left) have a  $\frac{7}{8}$ " crown at  $2\frac{5}{8}$ " centers in 22, 20, and 18 gauge hot dipped galvanized steel for doors over 13' wide. "Baby" slats (right) have a  $\frac{1}{2}$ " crown at  $2\frac{1}{8}$ " centers in 22 and 20 gauge steel and aluminum. Additional slats are described concerning shutters on page 11.

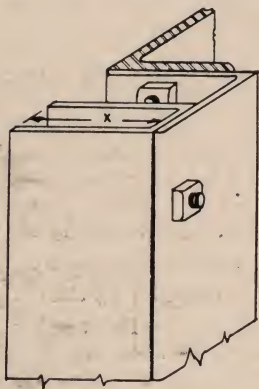
B for "Baby"



### Bottom Rail and Guide Data

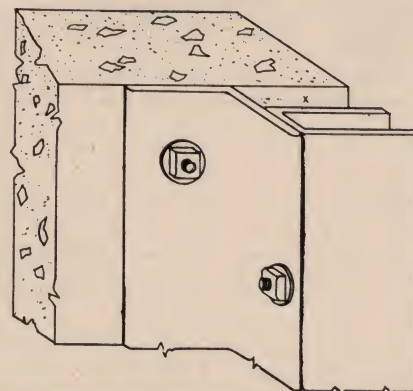
On the right is the standard bottom rail used in Lawrence service doors. A neat meeting with the sill makes these units effective protection in fire and weather trials. Offset or sloping construction and sponge rubber cored neoprene weatherstripping meet special conditions.

Left below is the guide structure as installed on steel buildings. Right below is the same equipment as installed on masonry construction. The table in the center gives the recommended standard channel depths (X) for various opening widths based upon 20# wind pressures.



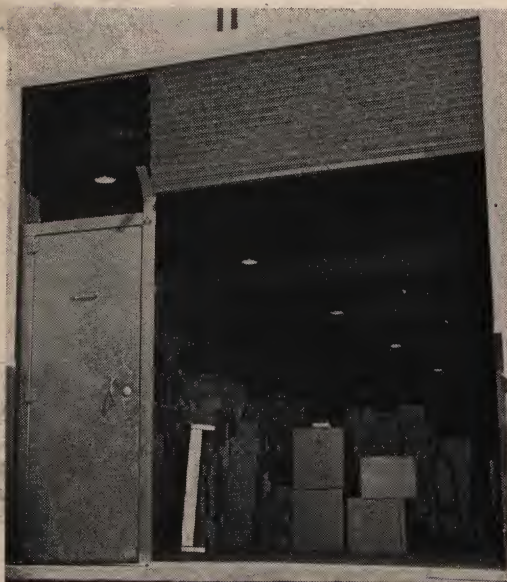
Opening Width	Channel Depth	Distance to Bolts
0-11 feet	2½"	4¼"
11-20	3"	4½"
20-26	3½"*	5½"
26-30	4"*	6"

\*Windlock channel of one size smaller may be used in close places.



### Alternates

Two types of alternate construction are pictured below. Left is a photo of a 2'6" x 6'8" hollow metal pilot door. 3'0" x 6'8" units, are available together with windows, mail slots and louvres. Right is the exterior view of disappearing mullion installation. This feature is valuable in reducing wide opening door costs and permitting increased traffic control through wide (over 35') openings.





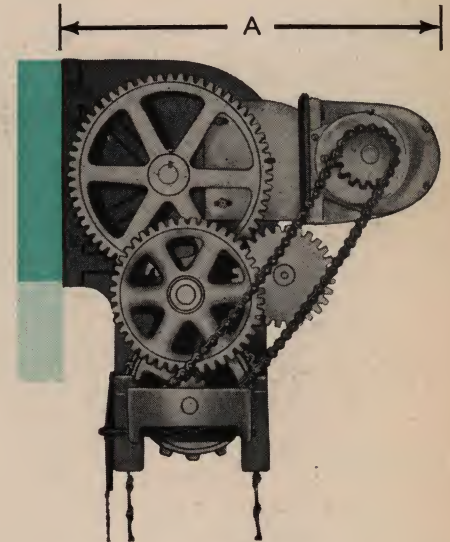
## Electric Operators



"DIPLOMAT" — Further information upon request

### Electric Motor Sizes

Door Size	Model	Motor Size
10'-0" x 10'-0"	110SE	1/3 HP.
12'-0" x 12'-0"	150SE	1/2 HP.
16'-0" x 16'-0"	150ME	3/4 HP.
20'-0" x 18'-0"	210ME	1 HP.



"AMBASSADOR" (#538 as shown on multiple reduction assembly)

## Electric Operator Specifications

**GENERAL:** The rolling doors noted in the schedule or on the plans as electrically operated shall be subject to the following additional specifications:

### ELECTRICAL EQUIPMENT

1. **Motor:** The motor shall be a N.E.M.A. standard gear head motor of recognized motor manufacture equipped with an enclosed continuous duty solenoid disc brake. The motor shall be of sufficient horsepower and torque output to operate the door easily at 40 feet per minute.
2. **Starter:** Starter equipment shall be a N.E.M.A. standard reversing magnetic motor starter of proper size and rating for the motor. It shall further be equipped with reset overload protection.
3. **Limit switch:** The limit switch as well as the motor starter and push button shall be the product of a recognized electrical equipment manufacturer. It shall be gear driven and adjustable from outside the case to

stop the door at the full open and full closed positions automatically.

4. **Push button:** The push button shall be the three button type enclosed within its own case and shall be marked open, close and stop, for opening, closing and/or stopping the door at any point of its travel.

**MECHANICAL:** The mechanical features of the electric operator shall provide that the hand operation is entirely separate from the electrical equipment. There shall be a clutch assembly, operable within easy reach of the floor, from the hand to the electric operation with a safety neutral between mechanically preventing the electric operation of the hand chain. The continuous galvanized hand chain auxiliary shall by pass the high speed reduction gearing in the motor for greater hand chain speed of operation and shall require not more than 35# pull. The timing of the limit switch shall not be affected during hand operation nor shall the removal of any or all of the electrical equipment affect the hand operation of the door.

## Clearance Table for Ambassador

Opening Height → Width ↓	To 8'-0"				To 10'-0"				To 13'-0"				To 16'-0"				To 24'-0"			
Dimensions in Inches	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
To 8'-0"	25	17	10½	5	25	17	10½	5	28	19½	11	6	28	21	11	6	.....			
To 12'-0"	25	17	10½	5	28	19½	10½	5	28	19½	11	6	28	21	11	6	28	21	11	6
To 16'-0"	25	17	11	6	28	19½	11	6	23	21	11	6	29	21	11	6	35	25	12	7
To 20'-0"	28	21	11	6	28	21	11	6	28	21	11	6	29	21	11	6	35	25	12	7
To 28'-0"	28	21	12	7	29	22	12	7	35	25	12	7	35	25	12	7	.....			



## Angle Sizes

Doors to 14' wide  
1½"x1½"x3/16"  
Door to 20' wide  
2"x1½"x3/16"  
Doors to 24' wide  
2½"x1½"x3/16"



## Balanced Bottom Rails

The table to the left indicates the angles used in the assembly of the balanced bottom rail which in meeting the floor seals off fire effectively. These angles are so assembled that one side may expand without the other.

## Automatic Closing Fire Door Specifications

### GENERAL:

A. All automatic closing fire doors shown on the plans shall be as manufactured by the Lawrence Steel Company of Los Angeles.

B. The fire doors shall be equipped with a positive governor to arrest the speed and weight of the automatic closing doors. This governor, inactive during the service use of the door, shall further act as a warning device of the doors' automatic closure.

C. The construction of the door shall include mechanisms to force the initial downward travel of the curtain preventing failures due to lack of use. This mechanism shall retain sufficient counterbalance to permit the opening of the door (on units up to 8'0" x 8'0") for purposes of escapement, reclosing automatically after use.

D. All doors shall be labeled or certified by *Underwriters* in accordance with the exposure involved.

**CURTAIN:** The curtain shall consist of rolled continuous interlocking slats of hot dipped galvanized and mill bonderized (for paint adherence) open hearth copper bearing cold rolled steel. The gauge and crown of the slats shall be according to *Underwriters'* tables for the size of door involved. Each slat will have a flame baffled malleable endlock at each end.

**BARREL:** The helical coil spring of oil tempered wire which will counterbalance the door weight to easy operation shall be housed with a barrel of prime steel pipe having a maximum deflection of .03 inches per foot. Barrel plug and spring mounting fittings shall be best grade cast iron.

**BRACKETS:** All brackets shall be of high tensile grey iron free from flaws and neatly machined. Similarly important castings throughout the door construction shall be of grey iron or brass as needed for maximum efficiency of operation and life. Gear patterns shall be of machine cut type.

**BEARINGS:** The door shall be equipped with lifetime lubricated ball bearing and shall be of sufficient size and strength to carry the door load without distortion or locking.

**GUIDES:** The entire guide structure shall be composed of materials 3/16 inches in thickness or greater. The neatly formed channel shall be bolted to the guide angle at points not greater than 12 inches on center. The guides shall have provision for mounting to the wall at 18 inch centers, with ⅜ inch bolts or better.

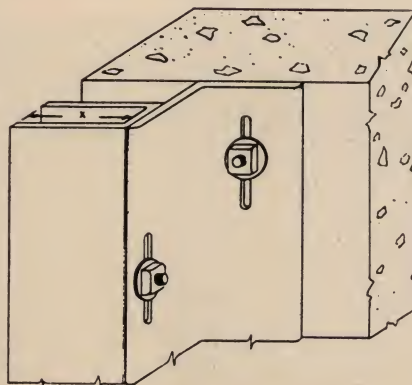
**HOOD:** The hood shall compose the main cover of the roll having further a secondary flame stop inside held open and release by its own independent fusible linkage. Both the hood and flame stop shall be of 24 gauge or better material similar to the curtain specifications. The hood shall be attached to the wall apart from the 3 normal attachments to each bracket.

**PAINT:** The entire door and its mechanism shall receive a shop coat of rust inhibitive paint. Fusible linkage is never painted.

**GUARANTEE:** All Lawrence rolling doors are guaranteed for a period of one year against defective workmanship or materials.

## Precision Guides

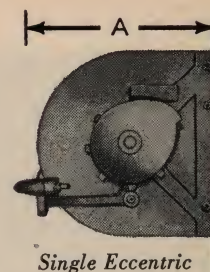
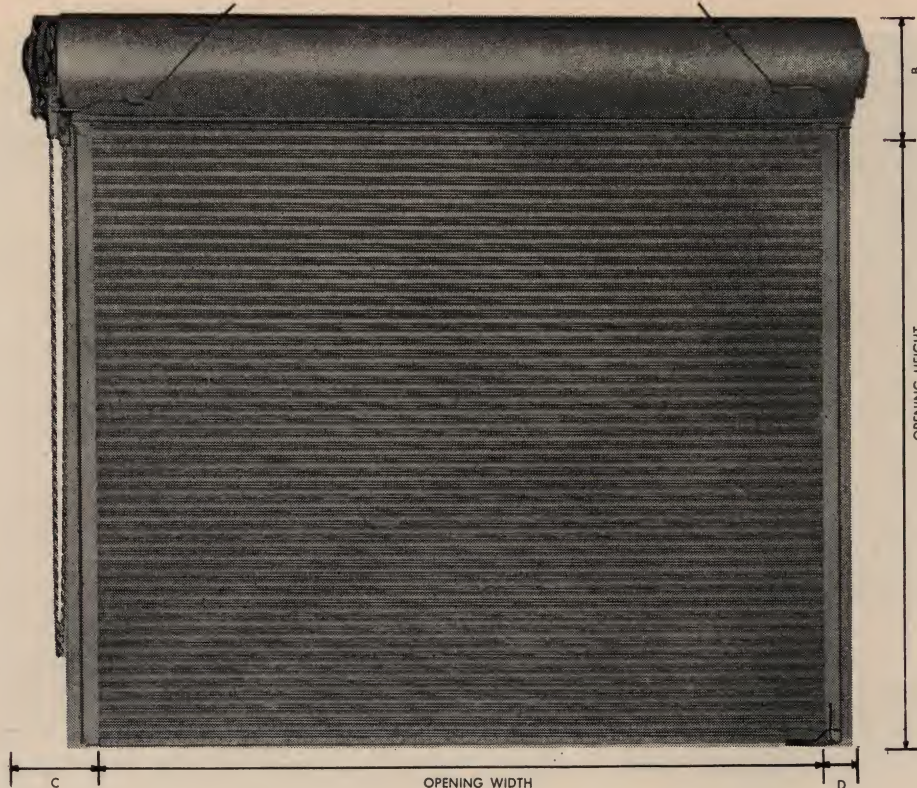
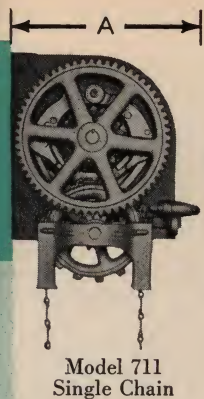
Pictured at the right is a section of the guide structure as produced by Lawrence. The table at right gives the inside depth of the guide channel and the distance to the wall bolt.



## Guide Table

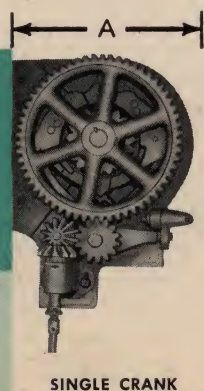
Width	Depth	Bolt
0'-4'	2"	3½"
4'-8'	2½"	4"
8'-12'	3"	4½"
12'-16'	3½"	5¼"
16'-20'	4"	6"
20'-24'	4½"	7"





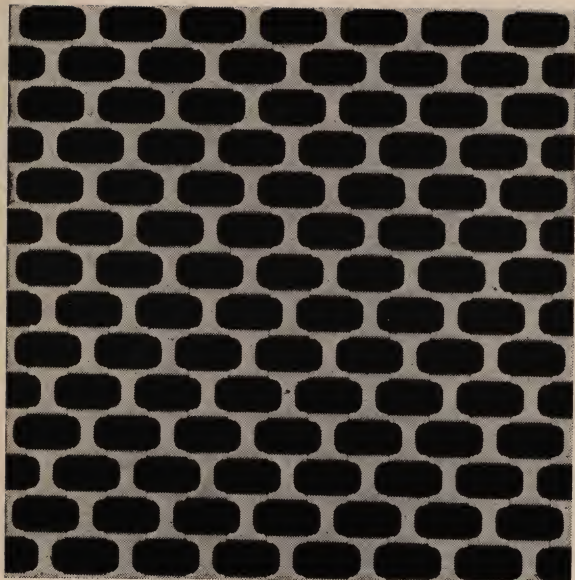
Opening Height → Width ↓	To 6'-0"				To 8'-0"				To 10'-0"				To 12'-0"				To 14'-0"			
Dimensions in Inches	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
To 4'-0"	15	16		7	15	17		7	NOT RECOMMENDED OVER 8'-0" HIGH											
To 8'-0"	15	17		7½	15	17		7½	18	18	8	7	18	19	8	7	18	19	8	7
To 10'-0"	18	17½	8	7	18	18	8	7	18	19	9	7	18	20	9	8	18	20	9	8
To 12'-0"	18	18	9	7	18	19	9	7	18	20	9	8	18	20	9	8	18	20	9	8
To 14'-0"					18	20	9	8	19	20	10	8½	19	22	10	8½	19	22	10	8½
To 16'-0"					19	21	11	9	19	21	11	9	20	22	11	9	20	22	11	9
To 18'-0"					20	22	11	10	20	22	11	10	20	23	11	10	20	23	11	10

\*Reverse C & D If Chain Operation Desired at Right Jamb



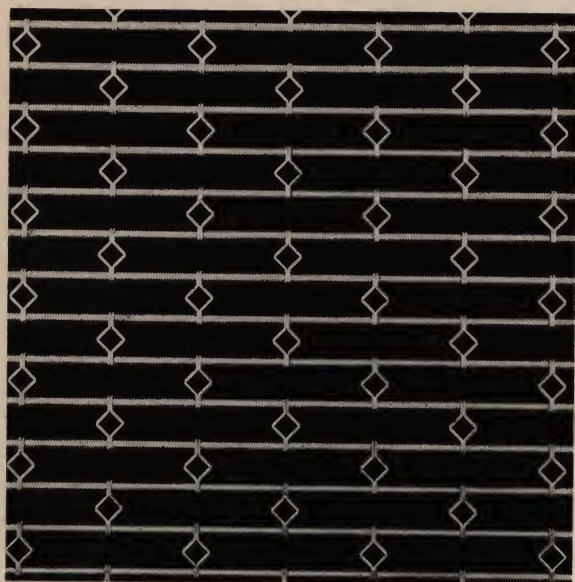
Crank operated fire doors (as pictured to the left) are not specifically covered in the table above. To adjust table, add 6" to "C" for crank mechanism clearance.





### *The "Customized" Consul Grille*

Pictured to the left is the 1/1 pattern of our now famous Consul Grille. The usual material is 20 gauge hot dipped galvanized and mill bonderized copper bearing cold rolled strip steel such as in our line of service and fire doors. Also available in aluminum (mill, alumilited, and color alumilited finishes), brass and bronze. The self spacing links are set on 5/16" cadmium plated cold finished rods with the links themselves being 2" wide. Rod center is 2" but vertical opening height is reduced to 1 5/8" thanks to the link design.



### *The Revised Offset Diamond Grille*

Here is one of our older patterns but with a new look. The links are now made up of 2 pieces of formed aluminum or steel spaced out with 4" long tubes, all on the usual cadmium plated 5/16" rods. This grille as revised is now within the usual competitive pricing. This revision makes quality control far better than is found with the casting system as well as increasing the versatility of the types of materials used. A variation of this grille known as the Offset Diamond Bar Grille is shown in our master M 60 Catalog. See post card enclosure for same.



### *THE ROYAL GRILLE*

Here is the latest of our grille designs available at this writing. The Photo at the top of the opposite page shows this grille used in fixed and sliding entrance installations. This unit is also a self spacing type grille design based on 3/8" rods spaced at 2 1/2" O.C. The links are held from spreading with the overlay clip which increases the beauty of the design itself. Aluminum is standard on this design; however, steel, brass, etc., are also available on reasonable delivery.

### *Other Patterns and Designs*

We have also the Offset Diamond Bar, Offset Bar and Double Offset Bar patterns which might interest the reader. The post card enclosed will bring our latest Master Catalog wherein these are pictured and described fully.





***Introducing  
The Lawrence Royal Grille***

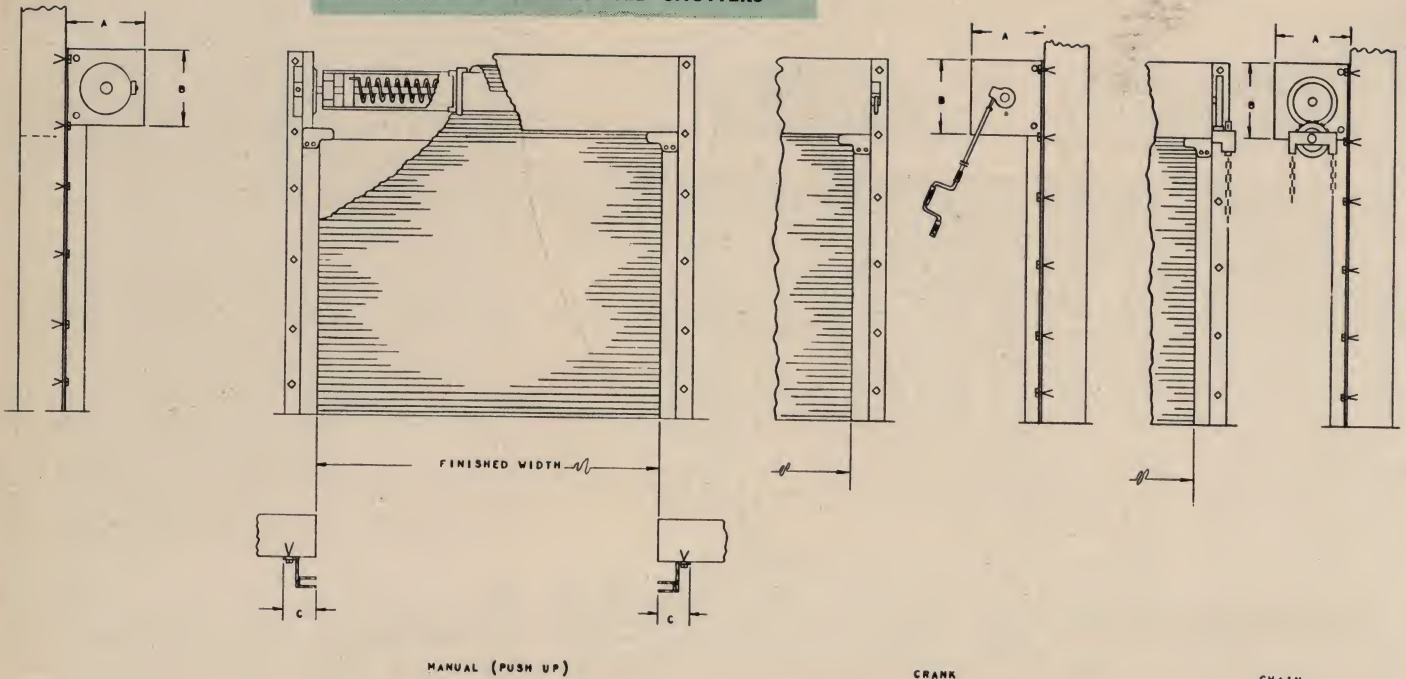
Pictured above is part of an installation of our newest design. This pictured installation is entirely in alumilited aluminum. This grille was used as the entire entrance face of the school with rolling grilles, fixed grille panels and a sliding grille panel, the latter of which are shown here.

This Royal Grille design features  $\frac{3}{8}$ " rods vertically spaced at  $2\frac{1}{2}$ " with the grille links with the overlay clip occurring at approx.  $3\frac{1}{2}$ " O.C. This grille design can be seen with two others on the page opposite and we have others. For those customers with our older and discontinued patterns, please be advised that spare parts are maintained for the old units.

The Lawrence grilles can be supplied with cremone type locking for use with cylinders from your regular suppliers (this type is built into the bottom rail assembly rather than the grille pattern being interrupted) or a dead bolt unit mounted on the guide channel (suitable for face of wall type installations only) which can be operated from either side. Complete information on these extras will be found in our Master Catalog.



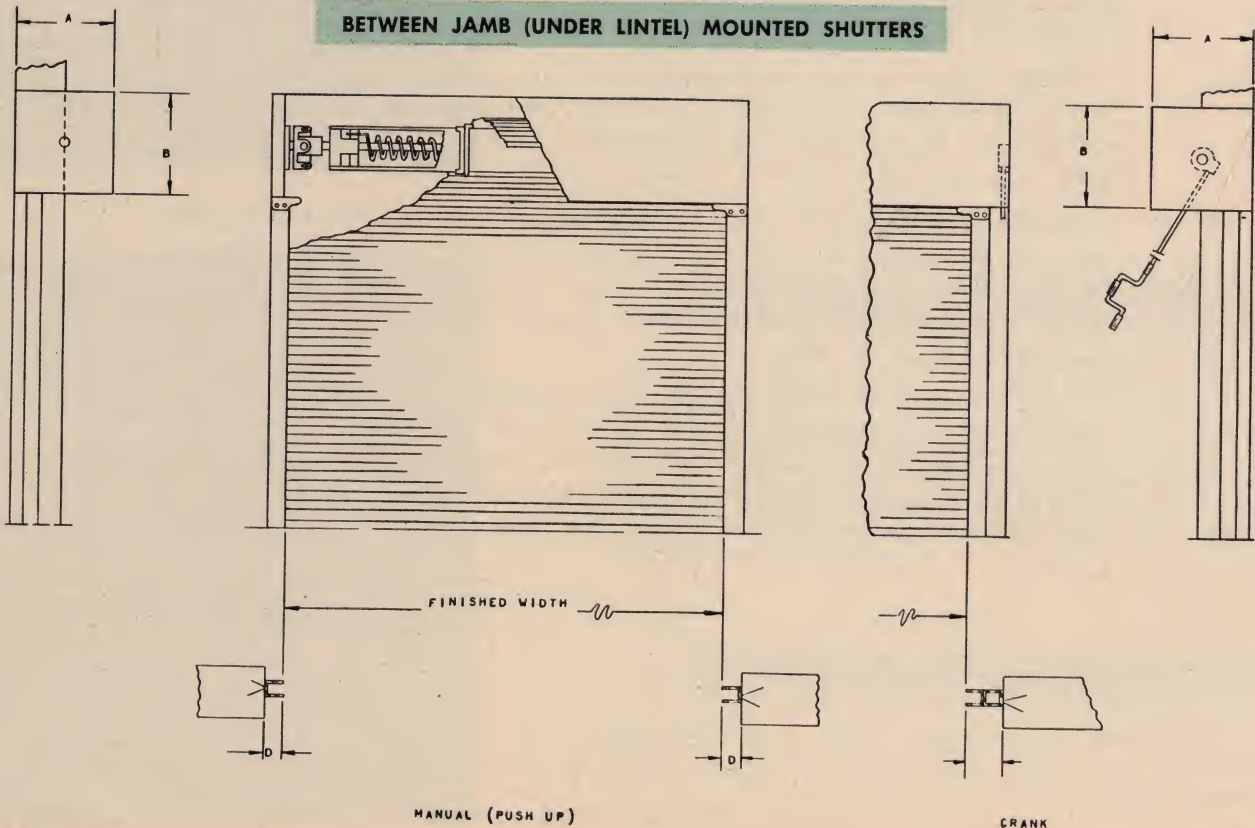
## FACE OF WALL MOUNTED SHUTTERS



## Clearance Schedule on Shutters

Opening Height → ↓ Width	To 3'0"				To 4'6"				To 7'0"			
	A	B	C	D	A	B	C	D	A	B	C	D
To 3'0"	8¼"	10"	3¾"	3¾"	8¼"	10"	3¾"	3¾"	10¼"	12"	5¼"	5¼"
To 8'0"	8¼"	10"	4¼"	4¼"	8¼"	10"	4¼"	4¼"	10¼"	12"	5¼"	5¼"
To 11'0"	10¼"	12"	4½"	4½"	10¼"	12"	4½"	4½"	10¼"	12"	5¼"	5¼"
To 15'0"	10¼"	12"	5¼"	5¼"	10¼"	12"	5¼"	5¼"	See Page 2 for Service Doors			

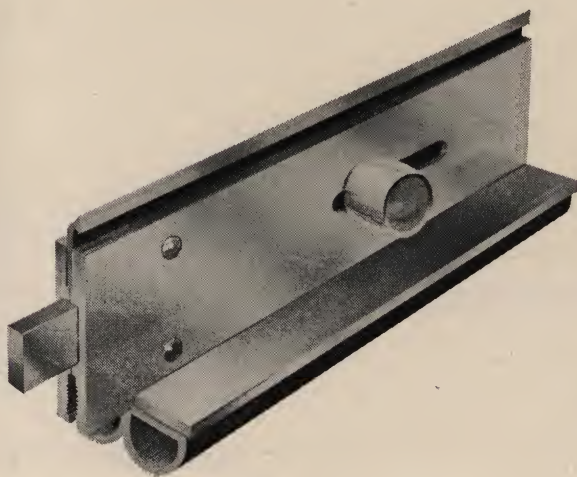
## BETWEEN JAMB (UNDER LINTEL) MOUNTED SHUTTERS



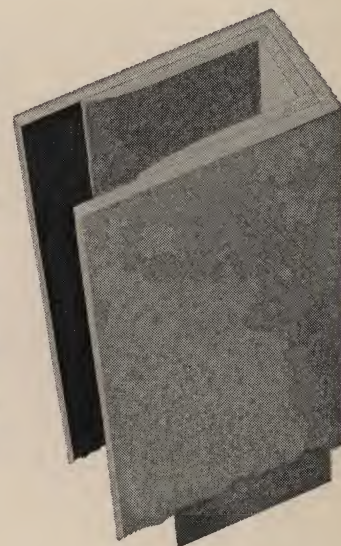




The smiling lady above is banked by 8 Lawrence Steel Rolling Shutters which protect the ticket counters of the Westgate Ball Park, San Diego, California. This installation features the 1 $\frac{1}{4}$ " flattie slat in aluminized steel which requires no finish painting. These units are also equipped with our new extruded bottom rail described below.



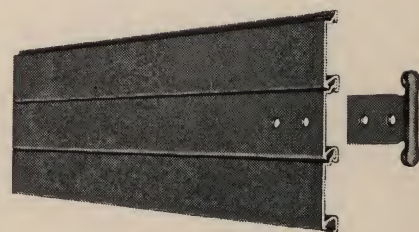
To the left is a section of our new shutter bottom rail assembly used on aluminized steel, rolled and extruded aluminum shutters. The concealed slide lock mechanism and the blending grey neoprene weatherstripping are only two of the fine features of Lawrence Shutters. Another feature is shown to the right consisting of our new "Marr guide cushion" which is a replaceable light grey neoprene liner for the guide channels to eliminate most of the operational noise of the shutter during opening and closing and to reduce to nil the rattle sometimes experienced when the shutter is buffeted by wind gusts. Similar materials are being developed for service doors and grilles.



"F" FLATTIE

### Shutter Slats

Here are two of the most widely used shutter slats. The service door "B" slat is also used. Both the B and the Flattie (1 $\frac{1}{4}$ " centers) slats are available in galvanized or aluminized steel and the regular aluminum. The Mary slat is the latest addition with its pleasant 1 $\frac{1}{4}$ " flat faced centers. The Mary slat is available in extruded aluminum only. Aluminum slats, either rolled or extruded, are available in mill finish, or buffed and aluminized, or in color aluminite finishes.



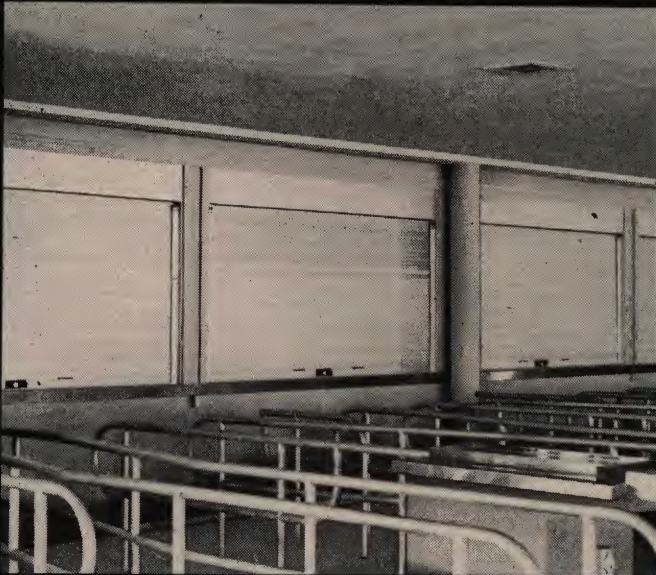
"M" MARY



# LAWRENCE

## STEEL AND ALUMINUM

### ROLLING SHUTTERS



#### SERVICE DOORS

OPERATED: push-up, chain crank, or electrically

#### SHUTTERS

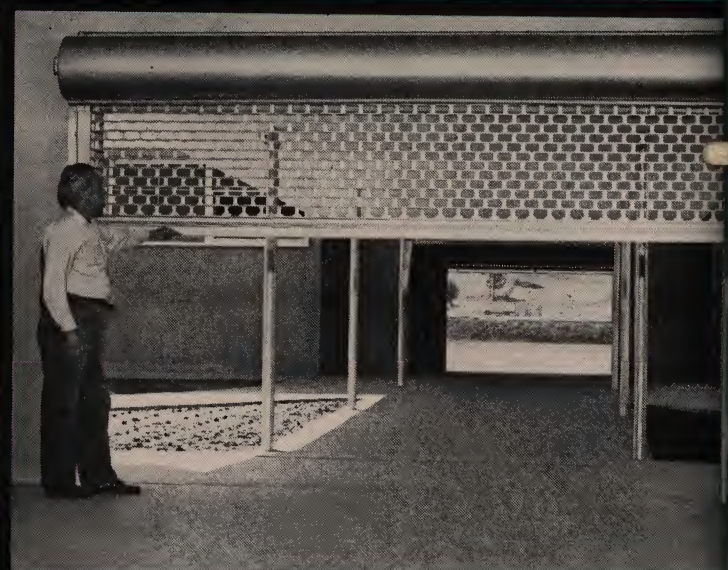
OPERATED: push-up, chain or crank

#### FIRE DOORS

(UL labeled) auto and non-auto manual, chain and crank operated

#### GRILLES

all operations, many designs



"Founded In 1925"  
THE **LAWRENCE**  
STEEL COMPANY

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